

REMARKS

Claims 1-27 were pending. Claims 8-11, 20-21 and 26-27 have been canceled without prejudice. New claims 28-34 have been added to further claim Applicants' invention. It is respectfully submitted that such amendments and new claims are supported by the application as filed and that no new matter has been added. Claims 1-7, 12-19, 22-25 and 28-34 are now pending.

The specification has been amended to correct an error regarding the reference numerals.

CLAIM REJECTIONS UNDER 35 U.S.C. § 102

The Examiner rejects claims 1-6 under 35 U.S.C. § 102(b) as being rejected by Ernst et al., U.S. Patent No. 5,381,348 ("Ernst").

Regarding claim 1, the rejection is respectfully traversed. Claim 1 recites "wherein the test set is capable of performing line qualification and connectivity testing." Connectivity testing is described in the specification at page 22, line 39 through page 26, line 16. Ernst, as understood, fails to disclose connectivity testing. Ernst mentions TDR testing in its Abstract, among other places. However, line qualification, such as TDR testing (Ernst), differs from connectivity testing (claim 1). See the specification at page 2, lines 3-17. Thus, it is respectfully submitted that Ernst fails to teach, indicate or suggest all the elements of claim 1.

Regarding claim 2, it is respectfully submitted that this claim is allowable as a claim dependent from claim 1, which is allowable as discussed above.

Regarding claim 3, the rejection is respectfully traversed. Claim 3 recites "wherein the display is a graphical display." An example of such graphical display can be seen in FIGS. 6B-6C (note the line 636 displayed graphically). Ernst, as understood, fails to disclose graphical display. Ernst shows a "display unit 708" in FIG. 27 that is described as showing "state characters" at col. 36, line 47 through col. 37, line 4. However, state characters (Ernst) differ from a graphical display (claim 3). Thus, it is

respectfully submitted that Ernst fails to teach, indicate or suggest all the elements of claim 3. In addition, it is respectfully submitted that claim 3 is allowable as a claim dependent from claim 1, which is allowable as discussed above.

Regarding claim 4, the rejection is respectfully traversed, for essentially the same reasons as given above regarding claim 3. "State characters" (Ernst, as discussed above), differ from showing selected test results in a graphical form (claim 4). Thus, it is respectfully submitted that Ernst fails to teach, indicate or suggest all the elements of claim 4. In addition, it is respectfully submitted that claim 4 is allowable as a claim dependent from claim 3, which is allowable as discussed above.

Regarding claim 5, the rejection is respectfully traversed. Claim 5 recites "wherein the connectivity testing includes bit-error-rate testing and loopback testing." Bit-error-rate testing is described in the specification at page 24, lines 5-10. Loopback testing is described in the specification at page 24, lines 14-16. When performing connectivity testing, the test set emulates the devices (xDSL modems as described in the preferred embodiment) connected to the network. See the specification at page 23, lines 1-14. Ernst, as understood, fails to disclose this feature. Ernst, as understood, discusses a device that matches the operating speed of the token ring. See col. 16, lines 1-3. Data is always present on the ring, and is thus not independently generated by Ernst's device. See col. 16, lines 43-45 and col. 17, lines 6-8. When the operating speed is matched, Ernst's device displays the data activity signal; when the operating speed is not matched, Ernst's device determines that invalid data has been received. See col. 16, lines 21-42. However, matching the operating speed of a network (Ernst) differs from emulating the devices on the network to generate information for bit-error-rate testing and loopback testing (claim 5). Thus, it is respectfully submitted that Ernst fails to teach, indicate or suggest all the elements of claim 5. In addition, it is respectfully submitted that claim 5 is allowable as a claim dependent from claim 1, which is allowable as discussed above.

Regarding claim 6, it is respectfully submitted that it is allowable as a claim dependent from claim 1, which is allowable as discussed above.

CLAIM REJECTIONS UNDER 35 U.S.C. § 103

The Examiner rejects claims 7-27 under 35 U.S.C. § 103 as being rejected by Ernst as applied to claim 1 above, further in view of Kahkoska et al., U.S. Patent No. 6,002,671 ("Kahkoska").

Regarding claim 7, the rejection is respectfully traversed. The Examiner asserts that Ernst shows a token ring and that the use of E1, T1, ISDN, DSL, HDSL, ADSL, and xDSL for the LAN medium is equivalent to a token ring. Such assertion is incorrect. A token ring differs from the DSL, etc. technologies recited in claim 7. For example, Ernst discusses that data is always present on a token ring. See col. 16, lines 43-45 and col. 17, lines 6-8. Ernst explicitly uses this feature to perform various functions. See col. 16, lines 21-42. However, data is not always present in the DSL, etc. technologies recited in claim 7. Consequently, test sets for DSL, etc. technologies do not test in the same way. Thus, it would not be obvious to modify Ernst to include the ADSL test features mentioned in Kahkoska without a more detailed or compelling suggestion to combine than merely to be compatible with recent technology. Therefore, it is respectfully submitted that the Examiner has failed to show a motivation to combine Ernst and Kahkoska. In addition, it is respectfully submitted that claim 7 is allowable as a claim dependent from claim 1, which is allowable as discussed above.

Claims 8-11 have been canceled without prejudice.

Regarding claim 12, the rejection is respectfully traversed. Claim 12 recites a "modem module." An example of such a modem module can be seen in FIGS. 4B-4C and as discussed in the specification at page 13, lines 30-36 and at page 14, lines 12-36. Such example shows that the use of the word "module" is in accordance with the standard meaning of that word. Neither Ernst nor Kahkoska, as understood, discloses anything regarding their testing units that even remotely resembles the standard meaning of "module" or "modular." Thus, it is respectfully submitted that the combination of Ernst and Kahkoska fails to teach, indicate or suggest all the elements of claim 12.

Further regarding claim 12, it is respectfully submitted that the Examiner has failed to provide a valid motivation to combine Ernst and Kahkoska. The only motivation given by the Examiner is "so that the test set would be compatible with DSL equipment." However, such motivation fails to address the significant differences between the token ring technology of Ernst (which Ernst explicitly uses to perform various functions; see col. 16, lines 21-42) and the ADSL test features mentioned in Kahkoska. It is not clear that Ernst would even operate in an environment in which data is not always present. The Examiner has provided no information that suggests that one of ordinary skill would combine token ring and ADSL technologies. Thus, it is respectfully submitted that one of ordinary skill in the art would have no motivation to combine Ernst and Kahkoska to result in the invention recited in claim 12.

Further regarding claim 12, it recites that "the modem module receiv[es] and process[es] the test data and generat[es] processed results." Even assuming that the Examiner is otherwise correct regarding claim 12, the Examiner's proposed combination is to insert Kahkoska's ADSL modem 12 or 18, not Kahkoska's test instrument 100 or 104, into Ernst's network control box 120. Kahkoska, as understood, fails to disclose that its ADSL modem 12 or 18 receives and processes the test data and generates processed results. Thus, it is respectfully submitted that the combination of Ernst and Kahkoska fails to teach, indicate or suggest all the elements of claim 12.

Finally regarding claim 12, it is respectfully submitted that it is allowable as a claim dependent from claim 1, which is allowable as discussed above.

Regarding claim 13, the rejection is respectfully traversed. The Examiner states as follows:

Item 107 in figure 2 is a lan connection as identified in figure 2. To communicate on a lan the ADSL modem must have a nic in it and every nic has a unique mac address so that it can communicate on a lan. The unique address is stored in the nic and the test set must use that address (identification value) to communicate with the ADSL modem.

The Examiner's conclusion appears to result from a misunderstanding of Kahkoska. Item 107 is a patch cord, not a LAN connection. In Kahkoska's FIG. 1, the 10BASE-T line is a LAN connection for connecting client computers 14. See col. 4, lines 4-13. In Kahkoska's FIG. 2, the two 10BASE-T lines are patch cords for directly connecting the test instruments 100 and 104 to standard 10BASE-T Ethernet ports of the ATUs 12 and 18. See col. 4, lines 33-38. In such a direct connection, the test instruments 100 and 104 have no need to know the unique MAC address of the ATU 12 or 18 to which they are directly connected. Thus, the Examiner's conclusion that the test instrument must use the MAC address of the ATU to which it is directly connected does not follow. Therefore, it is respectfully submitted that the combination of Ernst and Kahkoska fails to teach, indicate or suggest all the elements of claim 13. In addition, it is respectfully submitted that claim 13 is allowable as a claim dependent from claim 12, which is allowable as discussed above.

Regarding claim 14, it is respectfully submitted that it is allowable as a claim dependent from claim 12, which is allowable as discussed above.

Regarding claim 15, the rejection is respectfully traversed. The Examiner concedes that neither Ernst nor Kahkoska teaches the recited feature, but asserts that it would be obvious in order to make Ernst "compatible with recent technology." Such assertion is respectfully traversed. Such assertion fails to address the significant differences between the token ring technology of Ernst (which Ernst explicitly uses to perform various functions; see col. 16, lines 21-42) and any ATM connectivity testing. It is not clear that Ernst would even operate in an ATM environment in which data is not always present. The Examiner has provided no information that suggests that one of ordinary skill would combine token ring and ATM technologies. Thus, it is respectfully submitted that one of ordinary skill in the art would have no motivation to combine Ernst and Kahkoska to result in the invention recited in claim 15. In addition, it is respectfully submitted that claim 15 is allowable as a claim dependent from claim 12, which is allowable as discussed above.

Regarding claim 16, the rejection is respectfully traversed. Claim 16 recites "wherein the test set is configurable to perform line qualification or connectivity testing as selected by a command received from the user input device." (Even though the claim uses the word "or," the phrasing "as selected by" indicates that the test set must be configurable to perform both functions.) Connectivity testing is described in the specification at page 22, line 39 through page 26, line 16. Ernst, as understood, fails to disclose connectivity testing. Ernst mentions TDR testing in its Abstract, among other places. TDR testing is a type of line qualification. However, line qualification such as TDR testing (Ernst), differs from connectivity testing (claim 16). See the specification at page 2, lines 3-17. Thus, it is respectfully submitted that Ernst fails to teach, indicate or suggest all the elements of claim 16.

Further regarding claim 16, it recites a "modem module" that "receives and processes the test data to generate processed results." Even assuming that the Examiner is otherwise correct regarding claim 16, the Examiner's proposed combination is to insert Kahkoska's ADSL modem 12 or 18, not Kahkoska's test instrument 100 or 104, into Ernst's network control box 120. Kahkoska, as understood, fails to disclose that its ADSL modem 12 or 18 receives and processes the test data and generates processed results. Thus, it is respectfully submitted that the combination of Ernst and Kahkoska fails to teach, indicate or suggest all the elements of claim 16.

Regarding claim 17, it is respectfully submitted that it is allowable as a claim dependent from claim 12, which is allowable as discussed above.

Regarding claim 18, the rejection is respectfully traversed. Claim 18 recites "wherein the connectivity testing includes bit-error-rate testing and loopback testing." Bit-error-rate testing is described in the specification at page 24, lines 5-10. Loopback testing is described in the specification at page 24, lines 14-16. When performing connectivity testing, the test set emulates the devices (xDSL modems as described in the preferred embodiment) connected to the network. See the specification at page 23, lines 1-14. Ernst, as understood, fails to disclose this feature. Ernst, as understood, discusses a device that matches the operating speed of the token ring. See

col. 16, lines 1-3. Data is always present on the ring, and is thus not independently generated by Ernst's device. See col. 16, lines 43-45 and col. 17, lines 6-8. When the operating speed is matched, Ernst's device displays the data activity signal; when the operating speed is not matched, Ernst's device determines that invalid data has been received. See col. 16, lines 21-42. However, matching the operating speed of a network (Ernst) differs from emulating the devices on the network to generate information for bit-error-rate testing and loopback testing (claim 18). Thus, it is respectfully submitted that Ernst fails to teach, indicate or suggest all the elements of claim 18. In addition, it is respectfully submitted that claim 18 is allowable as a claim dependent from claim 16, which is allowable as discussed above.

Regarding claim 19, it is respectfully submitted that it is allowable as a claim dependent from claim 16, which is allowable as discussed above.

Claims 20-21 have been canceled without prejudice.

Regarding claim 22, the rejection is respectfully traversed. Claim 22 recites "wherein the test set is configurable to perform line qualification and connectivity testing." Connectivity testing is described in the specification at page 22, line 39 through page 26, line 16. Ernst, as understood, fails to disclose connectivity testing. Ernst mentions TDR testing in its Abstract, among other places. TDR testing is a type of line qualification. However, line qualification such as TDR testing (Ernst), differs from connectivity testing (claim 22). See the specification at page 2, lines 3-17. Thus, it is respectfully submitted that Ernst fails to teach, indicate or suggest all the elements of claim 22.

Further regarding claim 22, it recites a "modem module" that "receives and processes the intermediate results." Even assuming that the Examiner is otherwise correct regarding claim 16, the Examiner's proposed combination is to insert Kahkoska's ADSL modem 12 or 18, not Kahkoska's test instrument 100 or 104, into Ernst's network control box 120. Kahkoska, as understood, fails to disclose that its ADSL modem 12 or 18 receives and processes the intermediate results. Thus, it is respectfully submitted that

the combination of Ernst and Kahkoska fails to teach, indicate or suggest all the elements of claim 22.

Regarding claim 23, it is respectfully submitted that it is allowable as a claim dependent from claim 22, which is allowable as discussed above.

Regarding claim 24, the rejection is respectfully traversed. The Examiner states as follows:

Item 107 in figure 2 is a lan connection as identified in figure 2. To communicate on a lan the ADSL modem must have a nic in it and every nic has a unique mac address so that it can communicate on a lan. The unique address is stored in the nic and the test set must use that address (identification value) to communicate with the ADSL modem.

The Examiner's conclusion appears to result from a misunderstanding of Kahkoska. Item 107 is a patch cord, not a LAN connection. In Kahkoska's FIG. 1, the 10BASE-T line is a LAN connection for connecting client computers 14. See col. 4, lines 4-13. However, in Kahkoska's FIG. 2, the two 10BASE-T lines are patch cords for directly connecting the test instruments 100 and 104 to standard 10BASE-T Ethernet ports of the ATUs 12 and 18. See col. 4, lines 33-38. In such a direct connection, the test instruments 100 and 104 have no need to know the unique MAC address of the ATU 12 or 18 to which they are directly connected. Thus, the Examiner's conclusion that the test instrument must use the MAC address of the ATU to which it is directly connected does not follow. Therefore, it is respectfully submitted that the combination of Ernst and Kahkoska fails to teach, indicate or suggest all the elements of claim 24. In addition, it is respectfully submitted that claim 24 is allowable as a claim dependent from claim 22, which is allowable as discussed above.

Regarding claim 25, it is respectfully submitted that it is allowable as a claim dependent from claim 22, which is allowable as discussed above.

Claims 26-27 have been canceled without prejudice.

NEW CLAIMS

New claims 28-34 have been added to further claim Applicants' invention.

Claim 28 recites "an xDSL modem module that attaches removably to the test set." It is respectfully submitted that the art of record fails to teach, indicate or suggest this feature, among others. Support for claim 28 can be found in FIGS. 3A, 4B and 4C and the corresponding parts of the specification, among other places.

Claim 29 recites "wherein the xDSL modem module is configured as a plug-in card." It is respectfully submitted that the art of record fails to teach, indicate or suggest this feature, among others. Support for claim 29 can be found in the specification at page 13, lines 30-36, among other places.

Claim 30 recites "wherein the xDSL modem module includes a stored identification value, wherein the test set reads the stored identification value when the selected xDSL modem module is attached to the test set, and wherein the test set performs xDSL tests that relate to the stored identification value." It is respectfully submitted that the art of record fails to teach, indicate or suggest this feature, among others. Support for claim 30 can be found in claim 13 as originally filed and in the specification at page 13, lines 4-29, among other places.

Claim 31 recites "wherein the test set stores a software program and executes selected portions of the software program as determined by the xDSL modem module emulating the particular type of xDSL modem." It is respectfully submitted that the art of record fails to teach, indicate or suggest this feature, among others. Support for claim 31 can be found in FIGS. 4B-4C and in the specification at page 14, lines 12-36, among other places.

Claim 32 recites "wherein the master test set and the slave test set each perform respective functions to test the xDSL communications network." It is respectfully submitted that the art of record fails to teach, indicate or suggest this feature, among others. Support for claim 32 can be found in FIGS. 8A-8B and in the specification at page 19, line 30 through page 20, line 17, among other places.

Claim 33 recites "wherein the test set is configured to test respective ends of an xDSL loop with a second test set that includes a respective xDSL modem module that emulates a remote xDSL modem." It is respectfully submitted that the art of record fails to teach, indicate or suggest this feature, among others. Support for claim 33 can be found in FIG. 9A and in the specification at page 24, lines 30-35, among other places.

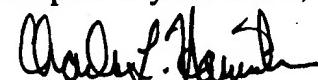
Claim 34 recites "wherein the test set is configured to test respective ends of an xDSL loop with one of a central office xDSL modem and a remote xDSL modem." It is respectfully submitted that the art of record fails to teach, indicate or suggest this feature, among others. Support for claim 34 can be found in FIGS. 9B-9C and in the specification at page 24, line 36 through page 25, line 14, among other places.

CONCLUSION

In view of the foregoing, applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,



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MARKED-UP VERSION SHOWING CHANGES

The paragraph at page 9, line 37 through page 10, line 5 has been amended as follows:

Test set 200 also includes a power supply circuit 336 that provide power to the circuits within test set 200 and modem module 330. Power supply circuit 336 can receive power from a battery pack [362] 338 or an external power supply source. Power supply circuit 336 can be a switching power supply circuit, or other circuits. Power source 336 can also include a charger, such as a battery charger, for charging battery pack 338 with the external power supply source.